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IN AFRICA AND THE MIDDLE EAST.

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William J. Durch

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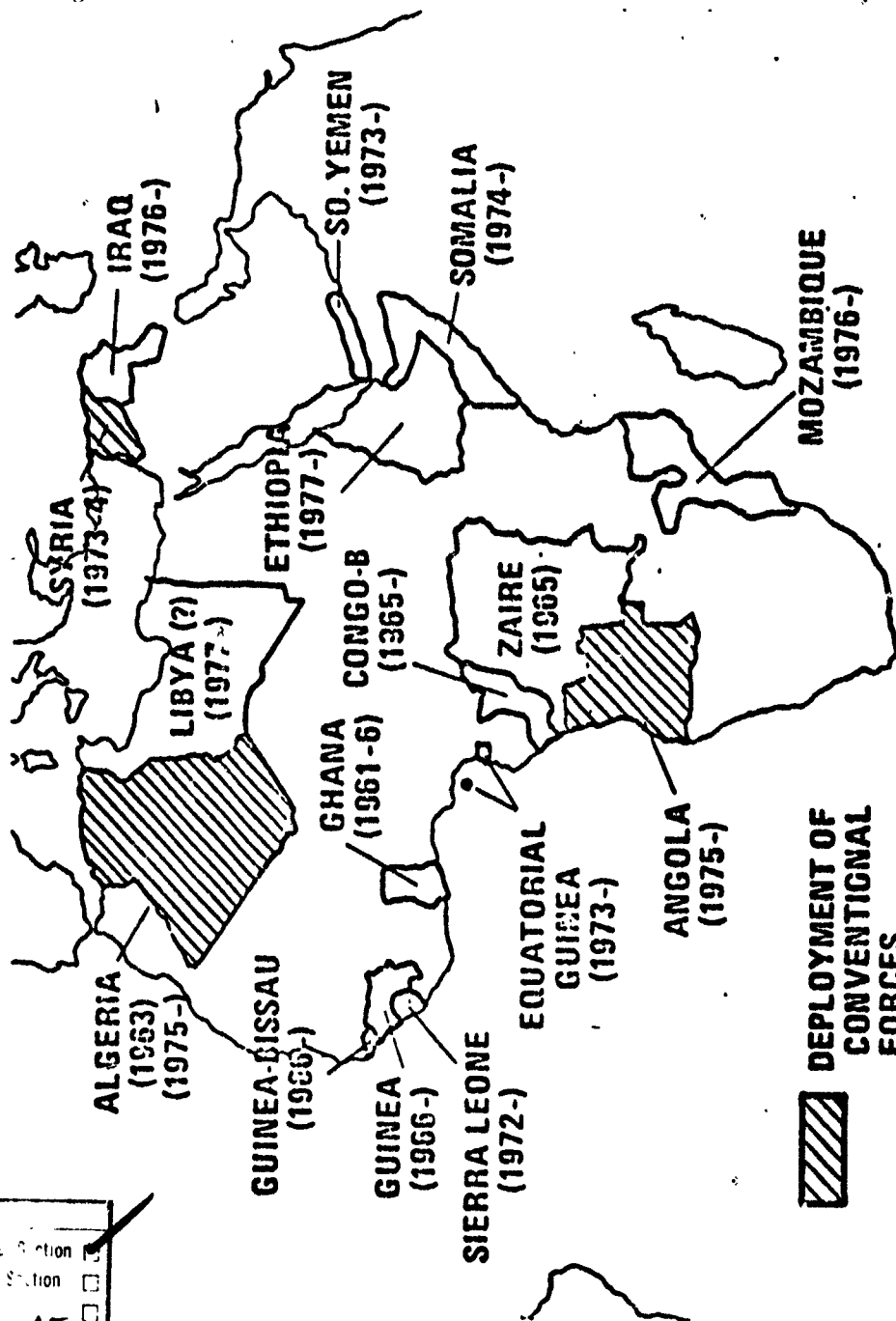
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REVOLUTION FROM A F.A.R. -- THE CUBAN
ARMED FORCES IN AFRICA AND THE MIDDLE EAST

↘ In 1975, when Fidel Castro sent thousands of combat troops to support the Popular Movement for the Liberation of Angola (the MPLA), many observers were taken aback at what they presumed to be a radical and dangerous departure in Cuban foreign policy. At best it seemed to signal renewed Cuban interest in the "export of revolution," and at worst, a new round of superpower competition in the Third World, in the form of "war by proxy." Two years later, as Cuban troops remain mired in Angola, the issue of Cuban military missions overseas remains one of the stumbling blocks to further improvements in U. S.-Cuban relations. ^{THIS REPORT TAKES} A close look at these missions, their origins, purposes, and likely future, ~~is long overdue.~~

Cuban military missions have been active in Africa since 1961 (and in the Middle East since 1973; see map). Military ties with the Angolan MPLA were established a decade before the first Cuban combat troops set foot in Angola. Castro's support for liberation movements and "progressive" regimes has, furthermore, transcended Cuban-Soviet relations. In the mid-60s -- when Havana and Moscow were at odds over Castro's domestic policies and his support for guerrilla groups in Latin America -- Cuban policies in Africa were essentially indistinguishable from those of the 1970s, a period of growing Cuban-Soviet cooperation. The Angolan intervention itself, while a radical departure in level of effort, was not a

THE RECORD OF CUBAN MILITARY DIPLOMACY:
PUTTING ANGOLA IN CONTEXT



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radical departure in policy, but an outgrowth of more than a decade of Cuban military involvement in the region.

It may seem ironic that Castro should have scored his greatest foreign policy victories in Africa, after all the concern in the 1960s over his efforts to export revolution to Latin America. But the one follows from the other. Cuban efforts in this hemisphere, directed at countries then closely aligned with the U. S., attracted American attention and reaction. Africa, on the other hand, remained a strategic backwater in U. S. policy-making until quite recently, its states newly-independent and largely non-aligned, its remaining colonies inviting liberation. As OAS sanctions increasingly isolated Cuba from its own region, Africa came to occupy an important place in Cuban foreign policy. Its "progressive" states offered political ties outside the socialist bloc, while its liberation movements offered a relatively risk-free opportunity to advance the cause of revolution in the Third World.

Cuban activities in Africa actually predate Havana's troubles with the OAS. By 1960, Cuban arms and medical personnel had reached the National Liberation Front fighting the French in Algeria. In 1961, Cuban instructors established a training camp for African guerrillas in Kwame Nkrumah's Ghana; the camp remained active until Nkrumah's overthrow in early 1966. Similar activities may have been undertaken in Algeria in the early 1960s. But all these were relatively low-level

endeavors. Cuba's first substantial military venture in Africa came in late 1963, during the border conflict between Algeria and Morocco.

A long-simmering territorial dispute between Algeria and Morocco erupted into war on October 14, 1963. One week later, the Cuban ship Aracelio Iglesias docked at the Algerian port of Oran with a cargo of T-34 tanks and 50 Cuban technicians. Algeria asserted that the shipment was part of a previous agreement with Cuba, not related to the fighting. The time of its arrival supports the Algerian claim. Oran is almost two weeks' sailing time from Havana; the ship must have been en route to Oran when the fighting began.

Algeria had little armor in its inventory before the Cuban shipment, and Cuba clearly intended to train the Algerians in the use of the tanks -- hence the 50 technicians. The outbreak of war, however, required both a speedup in the delivery of equipment, and the dispatch of troops to man it if it was to be of any use to Algeria in the immediate crisis. Two other Cuban ships, therefore, left Havana for Algeria shortly after the war broke out. The Gonzalez Lines docked at Oran on October 28, and another ship docked the 29th. Both carried arms -- tanks, artillery, mortars, ammunition -- and very likely the bulk of four hundred Cuban tank troops. An Air Cubana Britannia, landing at Oran on the 29th, may have brought in additional troops.

There is little evidence that the Cubans ever engaged in combat (a ceasefire was signed on October 30). The mission probably remained in Algeria through the end of the year, training the Algerians.

It withdrew in early January. Cuban-Moroccan diplomatic relations, severed during the crisis, then resumed.

The Cubans' interest in Africa remained high in 1964, probably increasing as their isolation from Latin America became more complete. Che Guevara's trip to Africa late that year signalled a new round of activism.

In the course of his three-month trip, Guevara spoke out in support of rebel forces in Congo-Leopoldville (now Zaire). He also met with the leaders of the liberation movements in Portugal's African colonies -- Angola, Mozambique, and Portuguese Guinea -- and pledged Cuban aid to all three movements, as well as to the Zairean rebels.

Cuban ships delivered arms to Congo-Brazzaville (home base for the Popular Movement for the Liberation of Angola, the MPLA) in mid-1965, and to Guinea (home base for the African Party for the Independence of Portuguese Guinea and the Cape Verde Islands, the PAIGC) about a year later. Cuban support of the Front for the Liberation of Mozambique (FRELIMO), based in Tanzania, is harder to establish, but Cuban instructors were apparently serving in guerrilla training camps in Tanzania by the late 1960s. Much earlier, Cuban military advisers, Che Guevara among them, were serving in the field with guerrilla groups in Zaire.

Guevara entered Zaire via Tanzania with a small band of Cubans in April 1965. He was joined in July by perhaps 200 additional men, who entered Zaire through neighboring Congo-Brazzaville. But

the Cubans found the rebel forces unwilling to fight and their leaders corrupt. After Zaire's Chief of Staff, Gen. Mobutu, seized power in a military coup in November 1965, Guevara and his men departed, probably joining the growing Cuban mission in Congo-Brazzaville.

The Brazzaville mission marks a turning point in Cuban military diplomacy in Africa. Its origins may be traced in part to the wave of military coups that toppled many African governments in 1965 and 1966. Among the leaders ousted were two of Cuba's best friends in Africa, Algeria's Ben Bella and Ghana's Nkrumah. With their downfall, Cuba lost both of its African guerrilla training bases. When new bases were established, in Congo-Brazzaville and Guinea, Cuba devoted more attention to protecting the host "progressive" governments. Consolidating revolutionary gains already made became as important as promoting revolution anew.

Cuba's fresh experience in combating energetic counter-revolutionary activities at home suited it, perhaps uniquely, to that task. Thus, from 1965 on, Cuba devoted a large part of its advisory effort in Africa to the training of popular militias, under the control of ruling parties, as counterweights to the regular armed forces. Brazzaville was the first of these missions. Cuba did not abandon its support for African revolutionary movements. But after the disaster in Zaire, Castro seems to have focused his attention on the task of liberating the Portuguese colonies and seems generally to have let established African governments alone.

The Cuban mission to Congo-Brazzaville grew from perhaps 250 men in mid-1965 to as many as 700 by June 1966, training a popular militia and serving as a presidential guard. In late June, the Cubans thwarted an attempted coup by the army, physically protecting government and party leaders during three days of unrest. In the wake of the attempted coup, the Cuban mission grew. By October, it numbered perhaps 1,000 men, making it half as large as the Congolese National Army itself. The mission was phased out by the Congolese government over the next two years, and a successful -- and complicated -- coup apparently brought the mission to an end by late 1968.

Not only did the Brazzaville mission train the Congolese militia, but at Dolisie, on the Cabinda border, Cuban instructors trained guerrillas of the Angolan MPLA. Active Cuban support for the MPLA thus preceded, by about ten years, the arrival of Cuban combat troops in Angola. Although the Brazzaville mission was phased out, a small contingent of Cuban instructors appears to have stayed with the MPLA into the 1970s.

Cuba's mission to the West African nation of Guinea essentially duplicated the one in Brazzaville. Guinea's security-conscious president, Sekou Toure, requested both a Cuban presidential guard and Cuban instructors for Guinea's militia. He received both. Militia training was underway by December 1966. It continues today.

Cuban advisers probably joined PAIGC guerrillas operating inside Portuguese Guinea in late 1966. Their presence was first noted

publicly by the Portuguese in February 1967. As the advisory mission grew, the Cubans assumed responsibility for logistics, communications, and other technical services for the guerrillas. They also served in the field, and suffered casualties.

Cuban activism in Africa trailed off toward the end of the 1960s. The Brazzaville mission essentially ended. The mission to Guinea and the PAIGC and the small advisory efforts with the MPLA and FRELIMO were now the only Cuban military missions on the continent; no new ones were undertaken.

When Cuban activism began to pick up once again in 1971, attention was first paid to the liberation of Portuguese Guinea. This was the first mission to receive additional men; by 1974, as many as 200 advisers were working with the guerrillas.

New missions in the 1970s included Sierra Leone in 1972, where Cuban advisers trained a 500-man internal security unit for President Siaka Stevens. A small contingent of Cuban advisers remains. In 1973, Cuba sent perhaps 80 military advisers to Equatorial Guinea to train a militia and other internal security forces as part of a larger, 500-man Cuban technical assistance mission.

The year 1973 also saw Cuban missions for the first time in the Middle East, as the geographic scope of Cuban activities expanded.

A 200-man advisory group -- including, for the first time, pilots -- was sent to South Yemen in the spring of 1973, in response

to a request from that country's ruling party. Cuban aid was requested despite the presence of a Soviet aid mission, because the Yemenis were apparently dissatisfied with the help they were receiving from Moscow. The Cuban mission trained the armed forces and militia, helped the government set up Committees for the Defense of the Revolution, modeled on those in Cuba, and gave indirect support to the Dhofar rebellion in neighboring Oman. After Iranian Special Forces intervened in the Dhofar rebellion on behalf of Oman, Cuba sent an additional 500 men to South Yemen. Yemen broke off support for the Dhofaris in early 1976. The Cuban mission -- which may have been drawn down earlier in support of Angola -- was back to 200 men by spring 1976.

During the October War between Israel and the Arab states, Cuba sent the equivalent of two battalions of tank troops and a small number of pilots to serve with the Syrians on the Golan Heights -- the so-called "solidarity front" -- alongside Moroccans, Jordanians, and Saudis. The Cubans reportedly participated in the sporadic fighting that continued on the heights until the Syrian-Israeli disengagement agreement of late May 1974. The troops were withdrawn in early 1975 after Syria agreed to renew the mandate of the U.N. peacekeeping force.

Syria represented the second deployment of conventional Cuban combat troops. As in Algeria ten years before, Cuba came to the aid of a friend in distress, and the deployment was similar in

size, but this time the Cubans brought no equipment with them. As in Algeria, when the immediate crisis ended, the Cubans pulled out.

Another Cuban mission in the 1970s was sent to Somalia, the first advisers arriving in early 1974. There were 50 by 1975, and the number increased again in 1976, though reports of 600-1,000 Cuban troops were exaggerated. The Somali mission includes 60-70 pilots, but most of the advisers are probably working with Somali internal security forces and the various guerrilla groups that are a part of the politics of the Horn of Africa.

Much the same can be said about the Cuban mission to Iraq, where perhaps 150 advisers arrived in July and August 1976. In Mozambique, by mid-1976, about 250 Cuban advisers were training members of the Zimbabwe People's Army (ZIPA). Their numbers had increased to perhaps 600 by year's end, and the Cubans appear to be edging out the Chinese as the guerrillas' primary advisers.

In connection with the continued fighting in Angola, perhaps 400 Cubans remain stationed in Congo-Brazzaville, where they support Cuban troops in Angola and nearby Cabinda. As many as 3,000 Cuban troops had been reported transferred to the Congo from Angola in mid-1976. At the opposite end of Angola, Cuban instructors train guerrillas of the Southwest Africa People's Organization (SWAPO). South Africa returns the favor by helping Jonas Savimbi's UNITA, which is still fighting in Angola.

Finally, in the wake of Fidel Castro's recent trip to Africa, one mission (thus far, numbering about 50) was sent to Ethiopia to train

the popular militia, and others, of roughly the same size, have been sent to Zambia (to train Rhodesian guerrillas) and reportedly to Libya (to serve as presidential guards).

In summary, Cuban foreign policy in Africa has been consistent for more than a decade, with Cuban advisers training guerrilla groups and popular militias, and serving in other internal security roles, in more than a dozen African (and more recently, Middle Eastern) countries. That policy included support for the Angolan MPLA.

Active Cuban support for the MPLA dates back to 1965. It developed not only because Agostinho Neto and his people had the proper ideological credentials, but because Cuba considered their rivals -- FNLA leader Holden Roberto, and his patron, President Mobutu of Zaire -- to be tools of the CIA. Havana further accused Mobutu, in the late 1960s, of using Cuban exiles both to run Zaire's transport system and to train the FNLA. The same "counterrevolutionary forces" arrayed against Cuba itself were thus seen to be arrayed against the MPLA as well. Success of the MPLA would be both a victory against colonialism and a defeat for the enemies of the Cuban revolution.

The Angolan civil war represented the playing out of these and other long-standing interests in the fate of Portugal's last colony in Africa. Cuban involvement in that conflict was predictable, given its specific interests, and its record of military diplomacy in that region. What the events of 1975 determined was the extent and timing of that involvement.

There are a number of good chronologies of events in Angola in 1975. Suffice it to say here that, as a result of fighting among the rival liberation groups in March 1975, arms deliveries to the MPLA by the Soviet bloc were increased. But what can a largely illiterate guerrilla force do with a growing inventory of sophisticated weaponry? In May, the MPLA asked for Cuban advisers. In June, the first 230 Cubans arrived to establish four training camps in MPLA-held territory in Angola and Cabinda. This mission was about as large as the one that had been sent to help the guerrillas in Portuguese Guinea, or the original mission to South Yemen -- a curious fact, given the greater size of Angola, unless the initial deployment was what amounted to a standard training unit.

The scope of the necessary commitment probably became clear soon after this first contingent of advisers arrived. A larger contingent of perhaps 1,500 Cubans -- what Havana calls "instructors" and what the U.S. calls "combat troops" -- reached Angola aboard Cuban ships in late September and early October. Some of these troops manned the Cuban training camps, while others joined MPLA forces in the field. They were, in short, both instructors and combat troops. But this does not necessarily contradict Cuba's later claim not to have sent "combat units" until South African forces had intervened in strength. As in Portuguese Guinea, Cuban troops appear to have been serving with MPLA units, at this point, rather than in units of their own. Even South Africa's account of

the fighting (as given in a widely reported press release of February 1977) seems to refer to separate Cuban combat units only after the first week of November. Furthermore, given the ratios of troops to advisors maintained by Cuba in Portuguese Guinea and South Yemen (between 20:1 and 50:1), and the size of the advisory task in Angola (to train an army of 30,000 men), a 1,500-man advisory group was not outsized. The effort, though greater, was consistent with previous Cuban behavior.

The Cuban six-month training timetable was set back when the South African-supported mechanized column entered the war on October 23. The Cuban mission, and the war, were soon in serious danger. Cuba responded with an air/sea troop lift (and the Soviet Union responded with an arms airlift) as Angola swiftly became Cuba's first conventional war. The South African intervention was not a post facto rationalization for Cuban involvement, but a real threat to Cuban lives and to Cuba's ten-year commitment to the MPLA.

Cuba's Africa policy dates from the mid-1960s, and in its earlier stages, Cuba's involvement in Angola tracked closely with that policy. Given that much, what can be said about the concept of proxy war and the contention that the Cubans merely function as surrogates for the Soviets in Africa, at Moscow's behest?

Cuba's present policy toward Africa evolved during a period of tension in Cuban-Soviet relations that has been well documented in the scholarly literature. Castro crossed Soviet policy in South America by supporting armed struggle as the only means of

bringing on the revolution. His support for guerrilla groups undermined the quiet "united front" strategies of the pro-Soviet Latin communist parties.

At home, Castro flouted the Soviet model of development and eased out of power most of Cuba's so-called "old communists", replacing them with his own men. A number of them were accused of conspiring against the government. This "microfaction", as Castro called it, wanted to bring Cuba's revolution in line with Soviet policy, and sought Soviet political and economic pressure against Castro's "petty bourgeois" regime to that end. The trial and imprisonment of the microfaction in early 1968 marked the nadir of Cuban-Soviet relations. Yet, six months later, Fidel Castro was one of the few communist leaders outside the Warsaw Pact to endorse the invasion of Czechoslovakia. In the interim, the Soviet Union had apparently exerted the kind of economic pressure that the microfaction's leaders had sought. Indeed, all Cuban criticism of the Soviet Union ceased. Beyond that, Cuban support for guerrilla groups in Latin America began to dry up. By early 1970, guerrilla leaders in Venezuela and Colombia were castigating Castro's "betrayal" of proletarian internationalism.

Cuban missions to Africa also tailed off in the late 1960s, but the drawdown began before the arrest of the microfaction and the subsequent Soviet clampdown, suggesting that factors other than Soviet pressure were responsible for this decline. One was probably the decline of the Cuban economy -- pushed to collapse in 1970 --

and the dwindling availability of funds to support overseas missions. Another was clearly the political unrest in the Congo. When the Cuban mission was asked to leave, it left, and no other countries asked for Cuban help.

Similarly, a recovering Cuban economy and increases in the number of targets of opportunity in Africa and the Middle East can account in part for the rise in Cuban activism in the 1970s. Cuban-Soviet relations have grown closer, and this cooperation has increased Cuban capabilities, through Soviet-assisted retraining and reorganization of the armed forces. But the increase in cooperation seems not to have affected Cuban intentions. Indeed, Cuba's Africa policy today seems indistinguishable from what it was in 1966, when Moscow and Havana were at odds.

This suggests very strongly that Cuban activities in Africa have their roots in Cuban, rather than Soviet, interests and motives, undermining the "proxy" model of Cuban behavior. The record of Cuban activities, furthermore, shows considerable precedent for the initial Cuban deployments to Angola and suggests ample incentives for Cuban participation in that conflict, apart from any reasons the Soviets may have had for wanting the Cubans to be there. If Cuban behavior in Angola served Soviet interests, Soviet behavior equally served Cuban interests -- the two sets converged. Many accounts of Angola have focused on Soviet interests alone. This leads to a characterization of Angola as a war by proxy -- with patron and clients, chessmaster and pawns -- when it might better be characterized as a war waged by allies, which the Marxist allies won.

Future Cuban activities in Africa will depend in part on the effects of continued fighting in Angola, and on the unfolding of events in Rhodesia. But the consistency of Cuban policy, its relative longevity, and the results of Castro's recent trip suggest that Cuban activism in Africa is likely to continue. Cuban military missions in Africa, long part of local politics, appear to be on the continent to stay.

CNA Professional Papers – 1973 to Present*

- PP 103
Friedheim, Robert L., "Political Aspects of Ocean Ecology" 48 pp., Feb 1973, published in Who Protects the Oceans, John Lawrence Hargrove (ed) (St. Paul West Publ'g. Co., 1974), published by the American Society of International Law AD 757 936
- PP 104
Schick, Jack M., "A Review of James Cable, Gunboat Diplomacy Political Applications of Limited Naval Forces," 5 pp., Feb 1973, (Reviewed in the American Political Science Review, Vol. LXVI, Dec 1972)
- PP 105
Corn, Robert J and Phillips, Gary R., "On Optimal Correction of Gunfire Errors," 22 pp., Mar 1973, AD 761 674
- PP 106
Stoloff, Peter H., "User's Guide for Generalized Factor Analysis Program (FACTAN)," 35 pp., Feb 1973, (Includes an addendum published Aug 1974) AD 758 824
- PP 107
Stoloff, Peter H., "Relating Factor Analytically Derived Measures to Exogenous Variables," 17 pp., Mar 1973, AD 758 820
- PP 108
McConnell, James M. and Kelly, Anne M., "Superpower Naval Diplomacy in the Indo-Pakistani Crisis," 14 pp., 5 Feb 1973, (Published, with revisions, in Survival, Nov/Dec 1973) AD 761 675
- PP 109
Berghofer, Fred G., "Salaries: A Framework for the Study of Trend," 8 pp., Dec 1973, (Published in Review of Income and Wealth, Series 18, No. 4, Dec 1972)
- PP 110
Augusta, Joseph, "A Critique of Cost Analysis," 9 pp., Jul 1973, AD 766 376
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Herrick, Robert W., "The USSR's 'Blue Belt of Defense' Concept: A Unified Military Plan for Defense Against Seaborne Nuclear Attack by Strike Carriers and Polaris/Poseidon SSBNs," 18 pp., May 1973, AD 766 375
- PP 112
Ginsberg, Lawrence H., "ELF Atmosphere Noise Level Statistics for Project SANGUINE," 29 pp., Apr 1974, AD 786 969
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Ginsberg, Lawrence H., "Propagation Anomalies During Project SANGUINE Experiments," 5 pp., Apr 1974, AD 786 968
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Maloney, Arthur P., "Job Satisfaction and Job Turnover," 41 pp., Jul 1973, AD 768 410
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Silverman, Lester P., "The Determinants of Emergency and Elective Admissions to Hospitals," 145 pp., 18 Jul 1973, AD 766 377
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Rehm, Allan S., "An Assessment of Military Operations Research in the USSR," 19 pp., Sep 1973, (Reprinted from Proceedings, 30th Military Operations Research Symposium (U), Secret Dec 1972) AD 770 116
- PP 117
McWhite, Peter B. and Ratliff, H. Donald,* "Defending a Logistics System Under Mining Attack," 24 pp., Aug 1976 (to be submitted for publication in Naval Research Logistics Quarterly), presented at 44th National Meeting, Operations Research Society of America, November 1973, AD A030 454
*University of Florida.
**Research supported in part under Office of Naval Research Contract N00014-68-0273-0017
- PP 118
Barfoot, C. Bernard, "Markov Duels," 18 pp., Apr 1973, (Reprinted from Operations Research, Vol. 22, No. 2, Mar-Apr 1974)
- PP 119
Stoloff, Peter and Lockman, Robert F., "Development of Navy Human Relations Questionnaire," 2 pp., May 1974, (Published in American Psychological Association Proceedings, 81st Annual Convention, 1973) AD 779 240
- PP 120
Smith, Michael W. and Schrimper, Ronald A.,* "Economic Analysis of the Intracity Dispersion of Criminal Activity," 30 pp., Jun 1974, (Presented at the Econometric Society Meetings, 30 Dec 1973) AD 780 538
*Economics, North Carolina State University
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Davine, Eugene J., "Procurement and Retention of Navy Physicians," 21 pp., Jun 1974, (Presented at the 49th Annual Conference, Western Economic Association, Las Vegas, Nev., 10 Jun 1974) AD 780 539
- PP 122
Kelly, Anne M., "The Soviet Naval Presence During the Iraq-Kuwait Border Dispute, March-April 1973," 34 pp., Jun 1974, (Published in Soviet Naval Policy, ed. Michael McGwire; New York: Praeger) AD 780 592
- PP 123
Peterson, Charles C., "The Soviet Port-Clearing Operation in Bangladesh, March 1972-December 1973," 35 pp., Jun 1974, (Published in Michael McGwire, et al. (eds) Soviet Naval Policy: Objectives and Constraints, (New York: Praeger Publishers, 1974) AD 780 540
- PP 124
Friedheim, Robert L. and Jehn, Mary E., "Anticipating Soviet Behavior at the Third U.N. Law of the Sea Conference: USSR Positions and Dilemmas," 37 pp., 10 Apr 1974, (Published in Soviet Naval Policy, ed. Michael McGwire, New York: Praeger) AD 783 701
- PP 125
Weinland, Robert G., "Soviet Naval Operations—Ten Years of Change," 17 pp., Aug 1974, (Published in Soviet Naval Policy, ed. Michael McGwire; New York: Praeger) AD 783 962
- PP 126 – Classified.
- PP 127
Dragulich, George S., "The Soviet Union's Quest for Access to Naval Facilities in Egypt Prior to the June War of 1967," 64 pp., Jul 1974, AD 786 318
- PP 128
Stoloff, Peter and Lockman, Robert F., "Evaluation of Naval Officer Performance," 11 pp., (Presented at the 82nd Annual Convention of the American Psychological Association, 1974) Aug 1974, AD 784 012
- PP 129
Hobbs, Arlene and Horowitz, Stanley, "Partial Unemployment Insurance Benefits and the Extent of Partial Unemployment," 4 pp., Aug 1974, (Published in the Journal of Human Resources, Vol. IX, No. 3, Summer 1974) AD 784 010
- PP 130
Dismukes, Bradford, "Roles and Missions of Soviet Naval General Purpose Forces in Wartime: Pro-SSBN Operation," 20 pp., Aug 1974, AD 786 320
- PP 131
Weinland, Robert G., "Analysis of Gorbikov's *Navies in War and Peace*," 45 pp., Aug 1974, (Published in Soviet Naval Policy, ed. Michael McGwire; New York: Praeger) AD 786 319
- PP 132
Kleinman, Samuel D., "Racial Differences in Hours Worked in the Market: A Preliminary Report," 77 pp., Feb 1975, (Paper read on 26 Oct 1974 at Eastern Economic Association Convention in Albany, N.Y.) AD A 005 517
- PP 133
Squires, Michael L., "A Stochastic Model of Regime Change in Latin America," 42 pp., Feb 1975, AD A 007 912
- PP 134
Root, R. M. and Conniff, P. F.,* "A Study of the Shock Spectrum of a Two-Degree-of-Freedom Non-linear Vibratory System," 39 pp., Dec 1975, (Published in the condensed version of The Journal of the Acoustic Society, Vol 60, No. 6, Dec 1976, pp. 1314
*Department of Mechanical Engineering, University of Maryland
- PP 135
Goudreau, Kenneth A.; Kuzmack, Richard A.; Wiedemann, Karen, "Analysis of Closure Alternatives for Naval Stations and Naval Air Stations," 47 pp., 3 Jun 1975 (Reprinted from "Hearing before the Subcommittee on Military Construction of the Committee on Armed Services," U.S. Senate, 93rd Congress, 1st Session, Part 2, 22 Jun 1973)
- PP 136
Stallings, William, "Cybernetics and Behavior Therapy," 13 pp., Jun 1975
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Peterson, Charles C., "The Soviet Union and the Reopening of the Suez Canal: Miniclearing Operations in the Gulf of Suez," 30 pp., Aug 1975, AD A 015 376

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CNA Professional Papers – 1973 to Present (Continued)

- PP 138
Stallings, William, "BRIDGE: An Interactive Dialogue-Generation Facility," 5 pp., Aug 1975 (Reprinted from IEEE Transactions on Systems, Man, and Cybernetics, Vol. 5, No. 3, May 1975)
- PP 139
Morgan, William F., Jr., "Beyond Folklore and Fables in Forestry to Positive Economics," 14 pp., (Presented at Southern Economic Association Meetings November, 1974) Aug 1975, AD A 015 293
- PP 140
Mahoney, Robert and Druckman, Daniel*, "Simulation, Experimentation, and Context," 36 pp., 1 Sep 1975, (Published in Simulation & Games, Vol. 6, No. 3, Sep 1975)
*Mathematica, Inc.
- PP 141
Mizrahi, Maurice M., "Generalized Hermite Polynomials,"* 5 pp., Feb 1976 (Reprinted from the Journal of Computational and Applied Mathematics, Vol. 1, No. 4 (1975), 273-277).
*Research supported by the National Science Foundation
- PP 142
Lockman, Robert F., John, Christopher, and Shughart, William F. II, "Models for Estimating Premature Losses and Recruiting District Performance," 16 pp., Dec 1975 (Presented at the RAND Conference on Defense Manpower, Feb 1976, to be published in the conference proceedings) AD A 020 443
- PP 143
Horowitz, Stanley and Sherman, Allan (LCdr., USN), "Maintenance Personnel Effectiveness in the Navy," 33 pp., Jan 1976 (Presented at the RAND Conference on Defense Manpower, Feb 1976, to be published in the conference proceedings) AD A021 58.
- PP 144
Durch, William J., "The Navy of the Republic of China - History, Problems, and Prospects," 66 pp., Aug 1976 (To be published in "A Guide to Asiatic Fleets," ed. by Barry M. Blochman, Naval Institute Press) AD A030 460
- PP 145
Kelly, Anne M., "Port Visits and the "Internationalist Mission" of the Soviet Navy," 36 pp., Apr 1976 AD A023 436
- PP 146
Palmour, Vernon E., "Alternatives for Increasing Access to Scientific Journals," 6 pp., Apr 1975 (Presented at the 1975 IEEE Conference on Scientific Journals, Cherry Hill, N.C., Apr 28-30, published in IEEE Transactions on Professional Communication, Vol. PC-18, No. 3, Sep 1975) AD A021 798
- PP 147
Kessler, J. Christian, "Legal Issues in Protecting Offshore Structures," 33 pp., Jun 1976 (Prepared under task order N00014-68-A-0091-0023 for ONR) AD A028 389
- PP 148
McConnell, James M., "Military-Political Tasks of the Soviet Navy in War and Peace," 62 pp., Dec 1975 (Published in Soviet Oceans Development Study of Senate Commerce Committee October 1976) AD A022 590
- PP 149
Squires, Michael L., "Counterforce Effectiveness: A Comparison of the Tripla "K" Measure and a Computer Simulation," 24 pp., Mar 1976 (Presented at the International Study Association Meetings, 27 Feb 1976) AD A022 591
- PP 150
Kelly, Anne M. and Petersen, Charles, "Recent Changes in Soviet Naval Policy: Prospects for Arms Limitations in the Mediterranean and Indian Ocean," 28 pp., Apr 1976, AD A 023 723
- PP 151
Horowitz, Stanley A., "The Economic Consequences of Political Philosophy," 8 pp., Apr 1976 (Reprinted from Economic Inquiry, Vol. XIV, No. 1, Mar 1976)
- PP 152
Mizrahi, Maurice M., "On Path Integral Solutions of the Schrödinger Equation, Without Limiting Procedure,"* 10 pp., Apr 1976 (Reprinted from Journal of Mathematical Physics, Vol. 17, No. 4 (Apr 1976), 566-575)
*Research supported by the National Science Foundation
- PP 153
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*Research supported by the National Science Foundation
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